Ham-Homebrew Digest   Wed, 7 Sep 94   Volume 94 : Issue 266

Today's Topics:
                Circuit Bd Software for Macs (3 msgs)
                        MIC Cable source???
                        Phase Locked Loops
                         QRP SSB Project
                   Ramsey 2m Amplifier Brick kit

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 6 Sep 94 15:48:59 GMT
From: news-mail-gateway@ucsd.edu
Subject: Circuit Bd Software for Macs
To: ham-homebrew@ucsd.edu

> McCAD Series
> By: VAMP
>   6753 Selma Ave.
>   Los Angeles, CA 90028
>   (213) 466-5533
> They've been around for many years, and their stuff runs from $400 for
> bare-bones, to about $4,000 for full-blown rip and retry autorouting.
(deleted)
> pursuing the engineering market. Buyers of engineering software
> beware. I spent around $3,000 for pcb software that won't run
> under system 7, and has some fatal bugs that won't ever be fixed.
> No amount of money will buy me an upgrade. How much will you
> spend?

>
> Alan

I'm a current user of Vamp's McCAD series. Their software works pretty well
under System 7.1, and will even run on a 1M Mac Plus.

Alan's advise to buyers of engineering software applies to software for ANY
platform. In the workstation world it is common for developers to demand

funding from hardware makers to port and support that platform. I'm not
sorry that Apple is not paying cash bribes to engineering software developers
but I too would like to see a better selection of engineering software for
the Macintosh.

I'll really miss ClarisCAD. It was/is a great program. Similar enough to

MacDraw to be really easy to use, yet with the proper enhancements to produce
the accuracy needed of a CAD drawing program. Its a shame it voilated Ashlar's
patents. Ashlar Vellum is a better CAD program, but not as easy to get started
with as ClarisCAD.

Some say the engineering Mac software market is too small, well, I've done
my part by purchasing $14,000 of Mac software for engineering use in the last
several years.

David Kelly, N4HHE
dkelly@nebula.tbe.com

Date: 6 Sep 94 16:05:59 GMT
From: news-mail-gateway@ucsd.edu
Subject: Circuit Bd Software for Macs
To: ham-homebrew@ucsd.edu

> I'm not a great user of Mac's, but one question that I've never thought to
ask:
> do Mac's have a feature that equals the processing power of an intel floating

> point processor? I ask this because I'm wondering if a Mac could do "hack"
work
> for low speed control systems, DSP, phased array antenna control, etc.

The MC68882 is either built-in or optional on all 68020 and 68030 Macintoshs.
Moto data sheets will prove that its faster than the 80387, Intel datasheets
will prove the opposite. One slick feature of the 68882 is that 68k CPU's
support up to 16 '882's at once. Pretty usefull for parallel processing, or
multiple users (OS wouldn't have to swap FPU registers on context switch).

As with the 486, the 68040 in Macintosh Quadras, contains a built-in FPU.
Some will gripe that some hardware functions of the '882 are performed in
software on the '040, yet the '040 is still 5 or 10 times faster. Watch out
for 68EC040's or 68LC040's, one or both of these do not include FPU and/or
MMU. I think the Quadra 605 uses one.

The AV series of Macintoshs include on-board DSP and real time video. The
AV PowerMac's don't include DSP as Apple claims the PowerPC chip is faster
than the DSP was.

David Kelly, N4HHE
dkelly@nebula.tbe.com

Date: 6 Sep 1994 16:38:19 GMT
From: yale.edu!noc.near.net!hopscotch.ksr.com!jfw@yale.arpa
Subject: Circuit Bd Software for Macs
To: ham-homebrew@ucsd.edu

pelt@vt.edu (Ranson J. Pelt) writes:
>Does anyone know of software to develop circuit boards designed for the Mac???

How complicated a circuit board do you need to design? For a typical
ham-radio homebrew design, you may be able to get by with something as
simple as MacDraw. For a multi-layer several-dozen digital IC design,
then you'll want something a bit more powerful :-). (For which I see
that others have posted recommendations.)

Date: 6 Sep 94 15:31:09 GMT
From: ihnp4.ucsd.edu!dog.ee.lbl.gov!agate!howland.reston.ans.net!
vixen.cso.uiuc.edu!aries!hawley@network.ucsd.edu
Subject: MIC Cable source???
To: ham-homebrew@ucsd.edu

x90galbrait1@wmich.edu writes:

>Greetings,
>Anyone know where I could purchase 50 feet or less of Mic cable-2 conductor +
>ground/shield?
>Mouser and Digikey only ship in 100 or 500' lengths.
>Tks+73,
>Chris, KA8WFC

Radio Shack?

Chuck Hawley, KE9UW in Urbana, Illinois
hawley@aries.scs.uiuc.edu
School of Chemical Sciences, Electronic Services
University of Illinois, Urbana-Champaign

Date: Thu, 1 Sep 1994 04:02:33 GMT
From: ihnp4.ucsd.edu!dog.ee.lbl.gov!agate!iat.holonet.net!scpcug!
dennis.mcguire@network.ucsd.edu
Subject: Phase Locked Loops
To: ham-homebrew@ucsd.edu

 Can anyone tell me, in relatively simple terms, how a Phase Locked Loop
circuit works?
--- FreeMail 1.09
 * Origin: Tim's BBS * Erie, PA * 814-825-1731 * (1:2601/566)

Date: Tue, 6 Sep 1994 13:56:58 GMT
From: ihnp4.ucsd.edu!swrinde!howland.reston.ans.net!sol.ctr.columbia.edu!
news.ess.harris.com!adm01%rfc.comm.harris.com!gdian22@network.ucsd.edu
Subject: QRP SSB Project
To: ham-homebrew@ucsd.edu

Hello All -

   A few weeks ago I was looking for 455khz xtals for a project; turned
out I really needed 455khz resonators. Anyway, the project I was
building was a 80m SSB transceiver. The plans were from Derry VE7QK,
an active member of the Vancouver British Columbia QRP Club. It is a
neat circuit that fits on a board just smaller than a QSL card. It
uses NE602s for mixers, has a 455khz IF, and puts out a whopping 1/2watt.

   Brad (wb8ygg/2) and I (n2jgu) checked into the QRP net at 3.756 last
night with these rigs. It is amazing what 1/2w will do! The article
describing this rig is in the September 94 issue of the NorCal QRPp
newsletter (that's the journal of the Northern California QRP Club).

   If you've been waiting for a voice rig to build, this is a fairly
simple one to get on the air. It would not be a good project for a
novice builder to attempt. Cost is about $50.

73 for now.
- Gary N2JGU

p.s. To subscribe to the QRPp, send $5 to Jim Cates (wa6ger), 3241
Eastwood Rd., Sacremento CA 95821. BTW, it's a 1/4'ly pub.
[I'm not paid for this info, I'm just a happy, informed QRPer!]

Date: 6 Sep 1994 13:30:14 -0700
From: ihnp4.ucsd.edu!swrinde!gatech!udel!news.sprintlink.net!news.world.net!
news.teleport.com!news.teleport.com!not-for-mail@network.ucsd.edu
Subject: Ramsey 2m Amplifier Brick kit
To: ham-homebrew@ucsd.edu

pouelle@uoft02.utoledo.edu wrote:
: In article <Cv5E0I.6xL@fore.com>, ed@fore.com (Ed Bathgate) writes:
: >
: >I am thinking of getting the Ramsey 2M Brick amp kit and the matching
: >tx relay.
: >
: >Any experiences / opinions with this unit.
: >
: > 73
: >
: > Ed N3SDO
: > Ed@fore.com
: Ed,
: I recently built the Ramsey 2m PA-1 and relay. The amp seems to work
: fine. I run mine from my car (direct to battery) and use my HT to drive it.
: My HT puts out about 0.5 watts on low power, and this gets amplified to 10
: watts at the output of the amp. The relay circuit is kind of touchy with
: this low of drive - they spec a low drive mod, but I didn't do it. On
: high power my HT puts out about 5 watts that is amplified to close to 40
: watts. I don't have lab spec readings on the power out - just my cheap
: RS 2/440 SWR/POWER meter.

: My biggest complaint - there is no provision for mounting the &*^%*&
: circuit board!! I suppose this is to allow "a wide variety of mounting
: options" but I see it as a pain!

: Just my $ 0.05 (that's $ 0.02 + $ 0.03 for taxes).

: Patrick KB8PYM
: pouelle@uoft02.utoledo.edu

I opted to buy the completed unit. I added up the prices of the amp kit, the
relay kit, heat sink, and additional assorted hardware and came up with a

cost just short of the finished and tested unit.

BTW, if you buy the complete unit, you will find that Ramsey does not use a relay at all! There is a 1/4 (?) wave piece of coax feeding the received signal back around the amp. At the opposite end of the coax from the power amp output is a PIN diode which conducts when the amp outputs. This shorts the end of the coax, presenting an apparent open circuit at the amp end of the coax. Instant switching, works fine on packet.

The only downside to this amp is due to it's being a single transitor output. It is therefore biased ON in the middle of it's range, (let's see, is that called CLASS A ?). The result is that the amp draws 4+ amps at all times. For this reason I don't use it mobile. I occasionally forget and leave my mobile amp on, I use one which only draws significant current when I talk, thus not running the darn battery down.

73's
Gene
KB7WIP

Date: 6 Sep 1994 16:51:15 GMT
From: ihnp4.ucsd.edu!library.ucla.edu!europa.eng.gtefsd.com!
howland.reston.ans.net!noc.near.net!hopscotch.ksr.com!jfw@network.ucsd.edu
To: ham-homebrew@ucsd.edu

References <pelt-0109941312410001@box185.ams.vt.edu>,
<acooneyCvKIBK.KHs@netcom.com>, <778715151snz@arkas.demon.co.uk>t
Subject : Re: Circuit Bd Software for Macs

Michael@arkas.demon.co.uk (Michael J Dower) writes:
>I'm not a great user of Mac's, but one question that I've never thought to
>ask:
>do Mac's have a feature that equals the processing power of an intel floating
>point processor?

No, unfortunately you cannot slow down the Motorola floating point unit that much. :-)

Some Macs, even many Macs, have either 68882 FPU chips ('030, or 'LC040, based Macs) or integral FPU engines (full '040 or PPC Macs); when a 68K family CPU is being run at a speed that gives it equivalent performance to a selected Intel processor, the floating point speed is generally well in excess of the Intel processor, chiefly because Intel just hasn't focused very hard on FPU speed (since it doesn't help speed up important benchmarks like DOOM ;-).

There are a couple of system-level issues; many Mac applications do not use
the floating point unit because the Mac _architecture_ doesn't guarantee the
presence of one (much like the Intel 486SX offering). Some of these
applications include inline code to perform floating point arithmetic with
integer operations, and (needless to say) these applications are slow.
Other applications use Apple's "SANE" calls, which trap into the Toolbox
and either use built-in integer code or the FPU if it is present); these
applications are reasonably fast, but that's a lot of overhead compared
with raw FPU instructions. Some applications use raw FPU instructions,
and benefit most from an FPU (these apps are usually shipped both with
FPU versions and non-FPU versions).

>I've always used ibm clones for eng. work - I currently have a 486dx2/66
>with 8MB RAM purely as a "home-use" eng. machine to run antenna modelling
>software, etc. This involves much manipulation of large arrays containing
>double-precision floating-point numbers, and hence takes time. More RAM
>will be added (up to 32 MB) as money allows.   :)

PowerPC Macs are reasonably cheap (cheaper than some Pentium systems), they
are engineered to take good advantage of the PPC processor (unlike the
cheap Pentium systems that are a Pentium chip starving on a 486/33
motherboard), you can be DARNED sure the system will work when you get it
home, and the PowerPC excels at floating point work. (You'll probably need
to buy a developer's kit, though, to port the antenna modelling software.
But, hey, NEC2 sources are cheap.)

End of Ham-Homebrew Digest V94 #266
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